10429-000.ST25
SEQUENCE LISTING

<110> Novozymes A/S

<120> 10429, Mashing Process and Composition

<130> 10429.204-WO

<160> 20

<170> PatentIn version 3.2

<210> 1
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<212> PRT
<213> Aspergillus aculeatus

<400> 1

Met Lys Leu Leu Asn Leu Leu Val Ala Ala Ala Ala Ala Gly Ser Ala
1 5 10 15

Val Ala Ala Pro Thr His Glu His Thr Lys Arg Ala Ser Val Phe Glu
20 25 30

Trp Ile Gly Ser Asn Glu Ser Asp Ala Glu Phe Gly Thr Ala Ile Pro
35 40 45

Gly Thr Trp Gly Ile Asp Tyr Ile Phe Pro Asp Thr Ser Ala Ile Ala
50 55 60

Thr Leu Val Ser Lys Gly Met Asn Ile Phe Arg Val Gln Phe Met Met
65 70 75 80

Glu Arg Leu Val Pro Asn Ser Met Thr Gly Ser Tyr Asp Asp Ala Tyr
85 90 95

Leu Asn Asn Leu Thr Thr Val Val Asn Ala Ile Ala Ala Ala Gly Val
100 105 110

His Ala Ile Val Asp Pro His Asn Tyr Gly Arg Tyr Asn Asn Glu Ile
115 120 125

Ile Ser Ser Thr Ala Asp Phe Gln Thr Phe Trp Gln Asn Leu Ala Gly
130 135 140

Gln Phe Lys Asp Asn Asp Leu Val Ile Phe Asp Thr Asn Asn Glu Tyr
145 150 155 160

Asn Thr Met Asp Gln Thr Leu Val Leu Asp Leu Asn Gln Ala Ala Ile
165 170 175

Asp Gly Ile Arg Ala Ala Gly Ala Thr Ser Gln Tyr Ile Phe Ala Glu
180 185 190

Gly Asn Ser Trp Ser Gly Ala Trp Thr Trp Ala Asp Ile Asn Asp Asn

195 200 205

Met Lys Ala Leu Thr Asp Pro Gln Asp Lys Leu Val Tyr Glu Met His
210 215 220

Gln Tyr Leu Asp Ser Asp Gly Ser Gly Thr Ser Gly Val Cys Val Ser
225 230 235 240

Glu Thr Ile Gly Ala Glu Arg Leu Gln Ala Ala Thr Gln Trp Leu Lys
245 250 255

Asp Asn Gly Lys Val Asp Ile Leu Gly Glu Tyr Ala Gly Gly Ala Asn
260 265 270

Asp Val Cys Arg Thr Ala Ile Ala Gly Met Leu Glu Tyr Met Ala Asn
275 280 285

Asn Thr Asp Val Trp Lys Gly Ala Val Trp Trp Thr Ala Gly Pro Trp
290 295 300

Trp Ala Asp Tyr Met Phe Ser Met Glu Pro Pro Ser Gly Pro Ala Tyr
305 310 315 320

Ser Gly Met Leu Asp Val Leu Glu Pro Tyr Leu Gly
325 330

<210> 2
<211> 238
<212> PRT
<213> Aspergillus aculeatus

<400> 2

Met Lys Leu Ser Leu Leu Ser Leu Ala Thr Leu Ala Ser Ala Ala Ser
1 5 10 15

Leu Gln Arg Arg Ser Asp Phe Cys Gly Gln Trp Asp Thr Ala Thr Ala
20 25 30

Gly Asp Phe Thr Leu Tyr Asn Asp Leu Trp Gly Glu Ser Ala Gly Thr
35 40 45

Gly Ser Gln Cys Thr Gly Val Asp Ser Tyr Ser Gly Asp Thr Ile Ala
50 55 60

Trp His Thr Ser Trp Ser Trp Ser Gly Gly Ser Ser Ser Val Lys Ser
65 70 75 80

Tyr Val Asn Ala Ala Leu Thr Phe Thr Pro Thr Gln Leu Asn Cys Ile
85 90 95

Ser Ser Ile Pro Thr Thr Trp Lys Trp Ser Tyr Ser Gly Ser Ser Ile
100 105 110

Val Ala Asp Val Ala Tyr Asp Thr Phe Leu Ala Glu Thr Ala Ser Gly
115 120 125

Ser Ser Lys Tyr Glu Ile Met Val Trp Leu Ala Ala Leu Gly Gly Ala
130 135 140

Gly Pro Ile Ser Ser Thr Gly Ser Thr Ile Ala Thr Pro Thr Ile Ala
145 150 155 160

Gly Val Asn Trp Lys Leu Tyr Ser Gly Pro Asn Gly Asp Thr Thr Val
165 170 175

Tyr Ser Phe Val Ala Asp Ser Thr Thr Glu Ser Phe Ser Gly Asp Leu
180 185 190

Asn Asp Phe Phe Thr Tyr Leu Val Asp Asn Glu Gly Val Ser Asp Glu
195 200 205

Leu Tyr Leu Thr Thr Leu Glu Ala Gly Thr Glu Pro Phe Thr Gly Ser
210 215 220

Asn Ala Lys Leu Thr Val Ser Glu Tyr Ser Ile Ser Ile Glu
225 230 235

<210> 3
<211> 435
<212> PRT
<213> Humicola insolens

<400> 3

Met Ala Arg Gly Thr Ala Leu Leu Gly Leu Thr Ala Leu Leu Leu Gly
1 5 10 15

Leu Val Asn Gly Gln Lys Pro Gly Glu Thr Lys Glu Val His Pro Gln
20 25 30

Leu Thr Thr Phe Arg Cys Thr Lys Arg Gly Gly Cys Lys Pro Ala Thr
35 40 45

Asn Phe Ile Val Leu Asp Ser Leu Ser His Pro Ile His Arg Ala Glu
50 55 60

Gly Leu Gly Pro Gly Gly Cys Gly Asp Trp Gly Asn Pro Pro Pro Lys
65 70 75 80

Asp Val Cys Pro Asp Val Glu Ser Cys Ala Lys Asn Cys Ile Met Glu
85 90 95

Gly Ile Pro Asp Tyr Ser Gln Tyr Gly Val Thr Thr Asn Gly Thr Ser
100 105 110

Leu Arg Leu Gln His Ile Leu Pro Asp Gly Arg Val Pro Ser Pro Arg
115 120 125

Val Tyr Leu Leu Asp Lys Thr Lys Arg Arg Tyr Glu Met Leu His Leu
130 135 140

Thr Gly Phe Glu Phe Thr Phe Asp Val Asp Ala Thr Lys Leu Pro Cys
145 150 155 160

Gly Met Asn Ser Ala Leu Tyr Leu Ser Glu Met His Pro Thr Gly Ala
165 170 175

Lys Ser Lys Tyr Asn Pro Gly Gly Ala Tyr Tyr Gly Thr Gly Tyr Cys
180 185 190

Asp Ala Gln Cys Phe Val Thr Pro Phe Ile Asn Gly Leu Gly Asn Ile
195 200 205

Glu Gly Lys Gly Ser Cys Cys Asn Glu Met Asp Ile Trp Glu Ala Asn
210 215 220

Ser Arg Ala Ser His Val Ala Pro His Thr Cys Asn Lys Lys Gly Leu
225 230 235 240

Tyr Leu Cys Glu Gly Glu Glu Cys Ala Phe Glu Gly Val Cys Asp Lys
245 250 255

Asn Gly Cys Gly Trp Asn Asn Tyr Arg Val Asn Val Thr Asp Tyr Tyr
260 265 270

Gly Arg Gly Glu Glu Phe Lys Val Asn Thr Leu Lys Pro Phe Thr Val
275 280 285

Val Thr Gln Phe Leu Ala Asn Arg Arg Gly Lys Leu Glu Lys Ile His
290 295 300

Arg Phe Tyr Val Gln Asp Gly Lys Val Ile Glu Ser Phe Tyr Thr Asn
305 310 315 320

Lys Glu Gly Val Pro Tyr Thr Asn Met Ile Asp Asp Glu Phe Cys Glu
325 330 335

Ala Thr Gly Ser Arg Lys Tyr Met Glu Leu Gly Ala Thr Gln Gly Met
340 345 350

Gly Glu Ala Leu Thr Arg Gly Met Val Leu Ala Met Ser Ile Trp Trp
355 360 365

Asp Gln Gly Gly Asn Met Glu Trp Leu Asp His Gly Glu Ala Gly Pro
370 375 380

Cys Ala Lys Gly Glu Gly Ala Pro Ser Asn Ile Val Gln Val Glu Pro
385 390 395 400

Phe Pro Glu Val Thr Tyr Thr Asn Leu Arg Trp Gly Glu Ile Gly Ser
405 410 415

Thr Tyr Gln Glu Val Gln Lys Pro Lys Pro Lys Pro Gly His Gly Pro
420 425 430

Arg Ser Asp
435

<210> 4
<211> 254
<212> PRT
<213> Humicola insolens

<400> 4

Met Leu Lys Ser Ala Leu Leu Leu Gly Pro Ala Ala Val Ser Val Gln
1 5 10 15

Ser Ala Ser Ile Pro Thr Ile Pro Ala Asn Leu Glu Pro Arg Gln Ile
20 25 30

Arg Ser Leu Cys Glu Leu Tyr Gly Tyr Trp Ser Gly Asn Gly Tyr Glu
35 40 45

Leu Leu Asn Asn Leu Trp Gly Lys Asp Thr Ala Thr Ser Gly Trp Gln
50 55 60

Cys Thr Tyr Leu Asp Gly Thr Asn Asn Gly Gly Ile Gln Trp Ser Thr
65 70 75 80

Ala Trp Glu Trp Gln Gly Ala Pro Asp Asn Val Lys Ser Tyr Pro Tyr
85 90 95

Val Gly Lys Gln Ile Gln Arg Gly Arg Lys Ile Ser Asp Ile Asn Ser
100 105 110

Met Arg Thr Ser Val Ser Trp Thr Tyr Asp Arg Thr Asp Ile Arg Ala
115 120 125

Asn Val Ala Tyr Asp Val Phe Thr Ala Arg Asp Pro Asp His Pro Asn
130 135 140

Trp Gly Gly Asp Tyr Glu Leu Met Ile Trp Leu Ala Arg Tyr Gly Gly
145 150 155 160

Ile Tyr Pro Ile Gly Thr Phe His Ser Gln Val Asn Leu Ala Gly Arg
165 170 175

Thr Trp Asp Leu Trp Thr Gly Tyr Asn Gly Asn Met Arg Val Tyr Ser
180 185 190

Phe Leu Pro Pro Ser Gly Asp Ile Arg Asp Phe Ser Cys Asp Ile Lys
195 200 205

Asp Phe Phe Asn Tyr Leu Glu Arg Asn His Gly Tyr Pro Ala Arg Glu
210 215 220

Gln Asn Leu Ile Val Tyr Gln Val Gly Thr Glu Cys Phe Thr Gly Gly
225 230 235 240

Pro Ala Arg Phe Thr Cys Arg Asp Phe Arg Ala Asp Leu Trp
245 250

<210> 5
<211> 388
<212> PRT
<213> Humicola insolens

<400> 5

Met Lys His Ser Val Leu Ala Gly Leu Phe Ala Thr Gly Ala Leu Ala
1 5 10 15

Gln Gly Gly Ala Trp Gln Gln Cys Gly Gly Val Gly Phe Ser Gly Ser
20 25 30

Thr Ser Cys Val Ser Gly Tyr Thr Cys Val Tyr Leu Asn Asp Trp Tyr
35 40 45

Ser Gln Cys Gln Pro Gln Pro Thr Thr Leu Arg Thr Thr Thr Thr Pro
50 55 60

Gly Ala Thr Ser Thr Thr Arg Ser Ala Pro Ala Ala Thr Ser Thr Thr
65 70 75 80

Pro Ala Lys Gly Lys Phe Lys Trp Phe Gly Ile Asn Gln Ser Cys Ala
85 90 95

Glu Phe Gly Lys Gly Glu Tyr Pro Gly Leu Trp Gly Lys His Phe Thr
100 105 110

Phe Pro Ser Thr Ser Ser Ile Gln Thr His Ile Asn Asp Gly Phe Asn
115 120 125

Met Phe Arg Val Ala Phe Ser Met Glu Arg Leu Ala Pro Asn Gln Leu
130 135 140

Asn Ala Ala Phe Asp Ala Asn Tyr Leu Arg Asn Leu Thr Glu Thr Val
145 150 155 160

Asn Phe Ile Thr Gly Lys Gly Lys Tyr Ala Met Leu Asp Pro His Asn

165 170 175

Phe Gly Arg Tyr Tyr Glu Arg Ile Ile Thr Asp Lys Ala Ala Phe Ala
180 185 190

Ser Phe Phe Thr Lys Leu Ala Thr His Phe Ala Ser Asn Pro Leu Val
195 200 205

Val Phe Asp Thr Asn Asn Glu Tyr His Asp Met Asp Gln Gln Leu Val
210 215 220

Phe Asp Leu Asn Gln Ala Ala Ile Asp Ala Ile Arg Ala Ala Gly Ala
225 230 235 240

Thr Ser Gln Tyr Ile Met Val Glu Gly Asn Ser Trp Thr Gly Ala Trp
245 250 255

Thr Trp Asn Val Thr Asn Asn Asn Leu Ala Ala Leu Arg Asp Pro Glu
260 265 270

Asn Lys Leu Val Tyr Gln Met His Gln Tyr Leu Asp Ser Asp Gly Ser
275 280 285

Gly Thr Ser Thr Ala Cys Val Ser Thr Gln Val Gly Leu Gln Arg Val
290 295 300

Ile Gly Ala Thr Asn Trp Leu Arg Gln Asn Gly Lys Val Gly Leu Leu
305 310 315 320

Gly Glu Phe Ala Gly Gly Ala Asn Ser Val Cys Gln Gln Ala Ile Glu
325 330 335

Gly Met Leu Thr His Leu Gln Glu Asn Ser Asp Val Trp Thr Gly Ala
340 345 350

Leu Trp Trp Ala Gly Gly Pro Trp Trp Gly Asp Tyr Ile Tyr Ser Phe
355 360 365

Glu Pro Pro Ser Gly Ile Gly Tyr Thr Tyr Tyr Asn Ser Leu Leu Lys
370 375 380

Lys Tyr Val Pro
385

<210> 6
<211> 305
<212> PRT
<213> Humicola insolens

<400> 6

Met Arg Ser Ser Pro Leu Leu Arg Ser Ala Val Val Ala Ala Leu Pro
1 5 10 15

Val Leu Ala Leu Ala Ala Asp Gly Arg Ser Thr Arg Tyr Trp Asp Cys
20 25 30

Cys Lys Pro Ser Cys Gly Trp Ala Lys Lys Ala Pro Val Asn Gln Pro
35 40 45

Val Phe Ser Cys Asn Ala Asn Phe Gln Arg Ile Thr Asp Phe Asp Ala
50 55 60

Lys Ser Gly Cys Glu Pro Gly Gly Val Ala Tyr Ser Cys Ala Asp Gln
65 70 75 80

Thr Pro Trp Ala Val Asn Asp Asp Phe Ala Leu Gly Phe Ala Ala Thr
85 90 95

Ser Ile Ala Gly Ser Asn Glu Ala Gly Trp Cys Cys Ala Cys Tyr Glu
100 105 110

Leu Thr Phe Thr Ser Gly Pro Val Ala Gly Lys Lys Met Val Val Gln
115 120 125

Ser Thr Ser Thr Gly Gly Asp Leu Gly Ser Asn His Phe Asp Leu Asn
130 135 140

Ile Pro Gly Gly Gly Val Gly Ile Phe Asp Gly Cys Thr Pro Gln Phe
145 150 155 160

Gly Gly Leu Pro Gly Gln Arg Tyr Gly Gly Ile Ser Ser Arg Asn Glu
165 170 175

Cys Asp Arg Phe Pro Asp Ala Leu Lys Pro Gly Cys Tyr Trp Arg Phe
180 185 190

Asp Trp Phe Lys Asn Ala Asp Asn Pro Ser Phe Ser Phe Arg Gln Val
195 200 205

Gln Cys Pro Ala Glu Leu Val Ala Arg Thr Gly Cys Arg Arg Asn Asp
210 215 220

Asp Gly Asn Phe Pro Ala Val Gln Ile Pro Ser Ser Ser Thr Ser Ser
225 230 235 240

Pro Val Asn Gln Pro Thr Ser Thr Ser Thr Thr Ser Thr Ser Thr Thr
245 250 255

Ser Ser Pro Pro Val Gln Pro Thr Thr Pro Ser Gly Cys Thr Ala Glu
260 265 270

Arg Trp Ala Gln Cys Gly Gly Asn Gly Trp Ser Gly Cys Thr Thr Cys
275 280 285

Val Ala Gly Ser Thr Cys Thr Lys Ile Asn Asp Trp Tyr His Gln Cys
290 295 300

Leu
305

<210> 7
<211> 335
<212> PRT
<213> Thermoascus aurantiacus

<400> 7

Met Lys Leu Gly Ser Leu Val Leu Ala Leu Ser Ala Ala Arg Leu Thr
1 5 10 15

Leu Ser Ala Pro Leu Ala Asp Arg Lys Gln Glu Thr Lys Arg Ala Lys
20 25 30

Val Phe Gln Trp Phe Gly Ser Asn Glu Ser Gly Ala Glu Phe Gly Ser
35 40 45

Gln Asn Leu Pro Gly Val Glu Gly Lys Asp Tyr Ile Trp Pro Asp Pro
50 55 60

Asn Thr Ile Asp Thr Leu Ile Ser Lys Gly Met Asn Ile Phe Arg Val
65 70 75 80

Pro Phe Met Met Glu Arg Leu Val Pro Asn Ser Met Thr Gly Ser Pro
85 90 95

Asp Pro Asn Tyr Leu Ala Asp Leu Ile Ala Thr Val Asn Ala Ile Thr
100 105 110

Gln Lys Gly Ala Tyr Ala Val Val Asp Pro His Asn Tyr Gly Arg Tyr
115 120 125

Tyr Asn Ser Ile Ile Ser Ser Pro Ser Asp Phe Gln Thr Phe Trp Lys
130 135 140

Thr Val Ala Ser Gln Phe Ala Ser Asn Pro Leu Val Ile Phe Asp Thr
145 150 155 160

Asn Asn Glu Tyr His Asp Met Asp Gln Thr Leu Val Leu Asn Leu Asn
165 170 175

Gln Ala Ala Ile Asp Gly Ile Arg Ser Ala Gly Ala Thr Ser Gln Tyr
180 185 190

Ile Phe Val Glu Gly Asn Ser Trp Thr Gly Ala Trp Thr Trp Thr Asn
195 200 205

Val Asn Asp Asn Met Lys Ser Leu Thr Asp Pro Ser Asp Lys Ile Ile
210 215 220

Tyr Glu Met His Gln Tyr Leu Asp Ser Asp Gly Ser Gly Thr Ser Ala
225 230 235 240

Thr Cys Val Ser Ser Thr Ile Gly Gln Glu Arg Ile Thr Ser Ala Thr
245 250 255

Gln Trp Leu Arg Ala Asn Gly Lys Lys Gly Ile Ile Gly Glu Phe Ala
260 265 270

Gly Gly Ala Asn Asp Val Cys Glu Thr Ala Ile Thr Gly Met Leu Asp
275 280 285

Tyr Met Ala Gln Asn Thr Asp Val Trp Thr Gly Ala Ile Trp Trp Ala
290 295 300

Ala Gly Pro Trp Trp Gly Asp Tyr Ile Phe Ser Met Glu Pro Asp Asn
305 310 315 320

Gly Ile Ala Tyr Gln Gln Ile Leu Pro Ile Leu Thr Pro Tyr Leu
325 330 335

<210> 8
<211> 327
<212> PRT
<213> Aspergillus aculeatus

<400> 8

Met Val Gln Ile Lys Ala Ala Ala Leu Ala Val Leu Phe Ala Ser Asn
1 5 10 15

Val Leu Ser Asn Pro Ile Glu Pro Arg Gln Ala Ser Val Ser Ile Asp
20 25 30

Ala Lys Phe Lys Ala His Gly Lys Lys Tyr Leu Gly Thr Ile Gly Asp
35 40 45

Gln Tyr Thr Leu Asn Lys Asn Ala Lys Thr Pro Ala Ile Ile Lys Ala
50 55 60

Asp Phe Gly Gln Leu Thr Pro Glu Asn Ser Met Lys Trp Asp Ala Thr
65 70 75 80

Glu Pro Asn Arg Gly Gln Phe Ser Phe Ser Gly Ser Asp Tyr Leu Val
85 90 95

Asn Phe Ala Gln Ser Asn Gly Lys Leu Ile Arg Gly His Thr Leu Val
100 105 110

Trp His Ser Gln Leu Pro Ser Trp Val Gln Ser Ile Ser Asp Lys Asn
115 120 125

Thr Leu Ile Gln Val Met Gln Asn His Ile Thr Thr Val Met Gln Arg
130 135 140

Tyr Lys Gly Lys Val Tyr Ala Trp Asp Val Val Asn Glu Ile Phe Asn
145 150 155 160

Glu Asp Gly Ser Leu Cys Gln Ser His Phe Tyr Asn Val Ile Gly Glu
165 170 175

Asp Tyr Val Arg Ile Ala Phe Glu Thr Ala Arg Ala Val Asp Pro Asn
180 185 190

Ala Lys Leu Tyr Ile Asn Asp Tyr Asn Leu Asp Ser Ala Ser Tyr Pro
195 200 205

Lys Leu Thr Gly Leu Val Asn His Val Lys Lys Trp Val Ala Ala Gly
210 215 220

Val Pro Ile Asp Gly Ile Gly Ser Gln Thr His Leu Ser Ala Gly Ala
225 230 235 240

Gly Ala Ala Val Ser Gly Ala Leu Asn Ala Leu Ala Gly Ala Gly Thr
245 250 255

Lys Glu Val Ala Ile Thr Glu Leu Asp Ile Ala Gly Ala Ser Ser Thr
260 265 270

Asp Tyr Val Asn Val Val Lys Ala Cys Leu Asn Gln Pro Lys Cys Val
275 280 285

Gly Ile Thr Val Trp Gly Ser Ser Asp Pro Asp Ser Trp Arg Ser Ser
290 295 300

Ser Ser Pro Leu Leu Phe Asp Ser Asn Tyr Asn Pro Lys Ala Ala Tyr
305 310 315 320

Thr Ala Ile Ala Asn Ala Leu
325

<210> 9
<211> 406
<212> PRT
<213> Aspergillus aculeatus

<400> 9

Met Val Gly Leu Leu Ser Ile Thr Ala Ala Leu Ala Ala Thr Val Leu
1 5 10 15

Pro Asn Ile Val Ser Ala Val Gly Leu Asp Gln Ala Ala Val Ala Lys

20 25 30

Gly Leu Gln Tyr Phe Gly Thr Ala Thr Asp Asn Pro Glu Leu Thr Asp
35 40 45

Ile Pro Tyr Val Thr Gln Leu Asn Asn Thr Ala Asp Phe Gly Gln Ile
50 55 60

Thr Pro Gly Asn Ser Met Lys Trp Asp Ala Thr Glu Pro Ser Gln Gly
65 70 75 80

Thr Phe Thr Phe Thr Lys Gly Asp Val Ile Ala Asp Leu Ala Glu Gly
85 90 95

Asn Gly Gln Tyr Leu Arg Cys His Thr Leu Val Trp Tyr Asn Gln Leu
100 105 110

Pro Ser Trp Val Thr Ser Gly Thr Trp Thr Asn Ala Thr Leu Thr Ala
115 120 125

Ala Leu Lys Asn His Ile Thr Asn Val Val Ser His Tyr Lys Gly Lys
130 135 140

Cys Leu His Trp Asp Val Val Asn Glu Ala Leu Asn Asp Asp Gly Thr
145 150 155 160

Tyr Arg Thr Asn Ile Phe Tyr Thr Thr Ile Gly Glu Ala Tyr Ile Pro
165 170 175

Ile Ala Phe Ala Ala Ala Ala Ala Ala Asp Pro Asp Ala Lys Leu Phe
180 185 190

Tyr Asn Asp Tyr Asn Leu Glu Tyr Gly Gly Ala Lys Ala Ala Ser Ala
195 200 205

Arg Ala Ile Val Gln Leu Val Lys Asn Ala Gly Ala Lys Ile Asp Gly
210 215 220

Val Gly Leu Gln Ala His Phe Ser Val Gly Thr Val Pro Ser Thr Ser
225 230 235 240

Ser Leu Val Ser Val Leu Gln Ser Phe Thr Ala Leu Gly Val Glu Val
245 250 255

Ala Tyr Thr Glu Ala Asp Val Arg Ile Leu Leu Pro Thr Thr Ala Thr
260 265 270

Thr Leu Ala Gln Gln Ser Ser Asp Phe Gln Ala Leu Val Gln Ser Cys
275 280 285

Val Gln Thr Thr Gly Cys Val Gly Phe Thr Ile Trp Asp Trp Thr Asp

290 295 300

Lys Tyr Ser Trp Val Pro Ser Thr Phe Ser Gly Tyr Gly Ala Ala Leu
305 310 315 320

Pro Trp Asp Glu Asn Leu Val Lys Lys Pro Ala Tyr Asn Gly Leu Leu
325 330 335

Ala Gly Met Gly Val Thr Val Thr Thr Thr Thr Thr Thr Thr Thr Ala
340 345 350

Thr Ala Thr Gly Lys Thr Thr Thr Thr Thr Thr Gly Ala Thr Ser Thr
355 360 365

Gly Thr Thr Ala Ala His Trp Gly Gln Cys Gly Gly Leu Asn Trp Ser
370 375 380

Gly Pro Thr Ala Cys Ala Thr Gly Tyr Thr Cys Thr Tyr Val Asn Asp
385 390 395 400

Tyr Tyr Ser Gln Cys Leu
405

<210> 10
<211> 231
<212> PRT
<213> Aspergillus aculeatus

<400> 10

Met Ala Arg Leu Ser Gln Phe Leu Leu Ala Cys Ala Leu Ala Val Lys
1 5 10 15

Ala Phe Ala Ala Pro Ala Ala Glu Pro Val Glu Glu Arg Gly Pro Asn
20 25 30

Phe Phe Ser Ala Leu Ala Gly Arg Ser Thr Gly Ser Ser Thr Gly Tyr
35 40 45

Ser Asn Gly Tyr Tyr Tyr Ser Phe Trp Thr Asp Gly Ala Ser Gly Asp
50 55 60

Val Glu Tyr Ser Asn Gly Ala Gly Gly Ser Tyr Ser Val Thr Trp Ser
65 70 75 80

Ser Ala Ser Asn Phe Val Gly Gly Lys Gly Trp Asn Pro Gly Ser Ala
85 90 95

His Asp Ile Thr Tyr Ser Gly Ser Trp Thr Ser Thr Gly Asn Ser Asn
100 105 110

Ser Tyr Leu Ser Val Tyr Gly Trp Thr Thr Gly Pro Leu Val Glu Tyr
115 120 125

Tyr Ile Leu Glu Asp Tyr Gly Glu Tyr Asn Pro Gly Ser Ala Gly Thr
130 135 140

Tyr Lys Gly Ser Val Tyr Ser Asp Gly Ser Thr Tyr Asn Ile Tyr Thr
145 150 155 160

Ala Thr Arg Thr Asn Ala Pro Ser Ile Gln Gly Thr Ala Thr Phe Thr
165 170 175

Gln Tyr Trp Ser Ile Arg Gln Thr Lys Arg Val Gly Gly Thr Val Thr
180 185 190

Thr Ala Asn His Phe Asn Ala Trp Ala Lys Leu Gly Met Asn Leu Gly
195 200 205

Thr His Asn Tyr Gln Ile Val Ala Thr Glu Gly Tyr Tyr Ser Ser Gly
210 215 220

Ser Ala Ser Ile Thr Val Ala
225 230

<210> 11
<211> 227
<212> PRT
<213> Humicola insolens

<400> 11

Met Val Ser Leu Lys Ser Val Leu Ala Ala Ala Thr Ala Val Ser Ser
1 5 10 15

Ala Ile Ala Ala Pro Phe Asp Phe Val Pro Arg Asp Asn Ser Thr Ala
20 25 30

Leu Gln Ala Arg Gln Val Thr Pro Asn Ala Glu Gly Trp His Asn Gly
35 40 45

Tyr Phe Tyr Ser Trp Trp Ser Asp Gly Gly Gly Gln Val Gln Tyr Thr
50 55 60

Asn Leu Glu Gly Ser Arg Tyr Gln Val Arg Trp Arg Asn Thr Gly Asn
65 70 75 80

Phe Val Gly Gly Lys Gly Trp Asn Pro Gly Thr Gly Arg Thr Ile Asn
85 90 95

Tyr Gly Gly Tyr Phe Asn Pro Gln Gly Asn Gly Tyr Leu Ala Val Tyr
100 105 110

Gly Trp Thr Arg Asn Pro Leu Val Glu Tyr Tyr Val Ile Glu Ser Tyr
115 120 125

Gly Thr Tyr Asn Pro Gly Ser Gln Ala Gln Tyr Lys Gly Thr Phe Tyr
130 135 140

Thr Asp Gly Asp Gln Tyr Asp Ile Phe Val Ser Thr Arg Tyr Asn Gln
145 150 155 160

Pro Ser Ile Asp Gly Thr Arg Thr Phe Gln Gln Tyr Trp Ser Ile Arg
165 170 175

Lys Asn Lys Arg Val Gly Gly Ser Val Asn Met Gln Asn His Phe Asn
180 185 190

Ala Trp Gln Gln His Gly Met Pro Leu Gly Gln His Tyr Tyr Gln Val
195 200 205

Val Ala Thr Glu Gly Tyr Gln Ser Ser Gly Glu Ser Asp Ile Tyr Val
210 215 220

Gln Thr His
225

<210> 12
<211> 389
<212> PRT
<213> Humicola insolens

<400> 12

Met Arg Ser Ile Ala Leu Ala Leu Ala Ala Ala Pro Ala Val Leu Ala
1 5 10 15

Gln Ser Gln Leu Trp Gly Gln Cys Gly Gly Ile Gly Trp Asn Gly Pro
20 25 30

Thr Thr Cys Val Ser Gly Ala Thr Cys Thr Lys Ile Asn Asp Trp Tyr
35 40 45

His Gln Cys Leu Pro Gly Gly Asn Asn Asn Asn Pro Pro Pro Ala Thr
50 55 60

Thr Ser Gln Trp Thr Pro Pro Pro Ala Gln Thr Ser Ser Asn Pro Pro
65 70 75 80

Pro Thr Gly Gly Gly Gly Gly Asn Thr Leu His Glu Lys Phe Lys Ala
85 90 95

Arg Gly Lys Gln Tyr Phe Gly Thr Glu Ile Asp His Tyr His Leu Asn
100 105 110

Asn Asn Gln Leu Met Glu Ile Ala Arg Arg Glu Phe Gly Gln Ile Thr
115 120 125

His Glu Asn Ser Met Lys Trp Asp Ala Thr Glu Pro Ser Arg Gly Ser
130 135 140

Phe Ser Phe Gly Asn Ala Asp Arg Val Val Asp Trp Ala Thr Ser Asn
145 150 155 160

Gly Lys Leu Ile Arg Gly His Thr Leu Leu Trp His Ser Gln Leu Pro
165 170 175

Gln Trp Val Gln Asn Ile Asn Asp Arg Asn Thr Leu Thr Gln Val Ile
180 185 190

Glu Asn His Val Arg Thr Val Met Thr Arg Tyr Lys Gly Lys Ile Phe
195 200 205

His Tyr Asp Val Val Asn Glu Ile Leu Asp Glu Asn Gly Gly Leu Arg
210 215 220

Asn Ser Val Phe Ser Arg Val Leu Gly Glu Asp Phe Val Gly Ile Ala
225 230 235 240

Phe Arg Ala Ala Arg Ala Ala Asp Pro Asp Ala Lys Leu Tyr Ile Asn
245 250 255

Asp Tyr Asn Leu Asp Ser Ala Asn Tyr Ala Lys Thr Arg Gly Met Ile
260 265 270

Asn Leu Val Asn Lys Trp Val Ser Gln Gly Val Pro Ile Asp Gly Ile
275 280 285

Gly Thr Gln Ala His Leu Ala Gly Pro Gly Gly Trp Asn Pro Ala Ser
290 295 300

Gly Val Pro Ala Ala Leu Gln Ala Leu Ala Gly Ala Asn Val Lys Glu
305 310 315 320

Val Ala Ile Thr Glu Leu Asp Ile Gln Gly Ala Gly Ala Asn Asp Tyr
325 330 335

Val Thr Val Ala Asn Ala Cys Leu Asn Val Gln Lys Cys Val Gly Ile
340 345 350

Thr Val Trp Gly Val Ser Asp Arg Asp Thr Trp Arg Ser Asn Glu Asn
355 360 365

Pro Leu Leu Tyr Asp Arg Asp Tyr Arg Pro Lys Ala Ala Tyr Asn Ala
370 375 380

Leu Met Asn Ala Leu
385

<210> 13
<211> 375
<212> PRT
<213> Myceliophthora thermophila

<400> 13

Met His Leu Ser Ser Ser Leu Leu Leu Leu Ala Ala Leu Pro Leu Gly
1 5 10 15

Ile Ala Gly Lys Gly Lys Gly His Gly His Gly Pro His Thr Gly Leu
20 25 30

His Thr Leu Ala Lys Gln Ala Gly Leu Lys Tyr Phe Gly Ser Ala Thr
35 40 45

Asp Ser Pro Gly Gln Arg Glu Arg Ala Gly Tyr Glu Asp Lys Tyr Ala
50 55 60

Gln Tyr Asp Gln Ile Met Trp Lys Ser Gly Glu Phe Gly Leu Thr Thr
65 70 75 80

Pro Thr Asn Gly Gln Lys Trp Leu Phe Thr Glu Pro Glu Arg Gly Val
85 90 95

Phe Asn Phe Thr Glu Gly Asp Ile Val Thr Asn Leu Ala Arg Lys His
100 105 110

Gly Phe Met Gln Arg Cys His Ala Leu Val Trp His Ser Gln Leu Ala
115 120 125

Pro Trp Val Glu Ser Thr Glu Trp Thr Pro Glu Glu Leu Arg Gln Val
130 135 140

Ile Val Asn His Ile Thr His Val Ala Gly Tyr Tyr Lys Gly Lys Cys
145 150 155 160

Tyr Ala Trp Asp Val Val Asn Glu Ala Leu Asn Glu Asp Gly Thr Tyr
165 170 175

Arg Glu Ser Val Phe Tyr Lys Val Leu Gly Glu Asp Tyr Ile Lys Leu
180 185 190

Ala Phe Glu Thr Ala Ala Lys Val Asp Pro His Ala Lys Leu Tyr Tyr
195 200 205

Asn Asp Tyr Asn Leu Glu Ser Pro Ser Ala Lys Thr Glu Gly Ala Lys
210 215 220

Arg Ile Val Lys Met Leu Lys Asp Ala Gly Ile Arg Ile Asp Gly Val
225 230 235 240

Gly Leu Gln Ala His Leu Val Ala Glu Ser His Pro Thr Leu Asp Glu

245 250 255

His Ile Asp Ala Ile Lys Gly Phe Thr Glu Leu Gly Val Glu Val Ala
260 265 270

Leu Thr Glu Leu Asp Ile Arg Leu Ser Ile Pro Ala Asn Ala Thr Asn
275 280 285

Leu Ala Gln Gln Arg Glu Ala Tyr Lys Asn Val Val Gly Ala Cys Val
290 295 300

Gln Val Arg Gly Cys Ile Gly Val Glu Ile Trp Asp Phe Tyr Asp Pro
305 310 315 320

Phe Ser Trp Val Pro Ala Thr Phe Pro Gly Gln Gly Ala Pro Leu Leu
325 330 335

Trp Phe Glu Asp Phe Ser Lys His Pro Ala Tyr Asp Gly Val Val Glu
340 345 350

Ala Leu Thr Asn Arg Thr Thr Gly Gly Cys Lys Gly Lys Gly Lys Gly
355 360 365

Lys Gly Lys Val Trp Lys Ala
370 375

<210> 14
<211> 226
<212> PRT
<213> Myceliophthora thermophila

<400> 14

Met Val Thr Leu Thr Arg Leu Ala Val Ala Ala Ala Ala Met Ile Ser
1 5 10 15

Ser Thr Gly Leu Ala Ala Pro Thr Pro Glu Ala Gly Pro Asp Leu Pro
20 25 30

Asp Phe Glu Leu Gly Val Asn Asn Leu Ala Arg Arg Ala Leu Asp Tyr
35 40 45

Asn Gln Asn Tyr Arg Thr Ser Gly Asn Val Asn Tyr Ser Pro Thr Asp
50 55 60

Asn Gly Tyr Ser Val Ser Phe Ser Asn Ala Gly Asp Phe Val Val Gly
65 70 75 80

Lys Gly Trp Arg Thr Gly Ala Thr Arg Asn Ile Thr Phe Ser Gly Ser
85 90 95

Thr Gln His Thr Ser Gly Thr Val Leu Val Ser Val Tyr Gly Trp Thr
100 105 110

Arg Asn Pro Leu Ile Glu Tyr Tyr Val Gln Glu Tyr Thr Ser Asn Gly
115 120 125

Ala Gly Ser Ala Gln Gly Glu Lys Leu Gly Thr Val Glu Ser Asp Gly
130 135 140

Gly Thr Tyr Glu Ile Trp Arg His Gln Gln Val Asn Gln Pro Ser Ile
145 150 155 160

Glu Gly Thr Ser Thr Phe Trp Gln Tyr Ile Ser Asn Arg Val Ser Gly
165 170 175

Gln Arg Pro Asn Gly Gly Thr Val Thr Leu Ala Asn His Phe Ala Ala
180 185 190

Trp Gln Lys Leu Gly Leu Asn Leu Gly Gln His Asp Tyr Gln Val Leu
195 200 205

Ala Thr Glu Gly Trp Gly Asn Ala Gly Gly Ser Ser Gln Tyr Thr Val
210 215 220

Ser Gly
225

<210> 15
<211> 225
<212> PRT
<213> Thermomyces lanuginosus

<400> 15

Met Val Gly Phe Thr Pro Val Ala Leu Ala Ala Leu Ala Ala Thr Gly
1 5 10 15

Ala Leu Ala Phe Pro Ala Gly Asn Ala Thr Glu Leu Glu Lys Arg Gln
20 25 30

Thr Thr Pro Asn Ser Glu Gly Trp His Asp Gly Tyr Tyr Tyr Ser Trp
35 40 45

Trp Ser Asp Gly Gly Ala Gln Ala Thr Tyr Thr Asn Leu Glu Gly Gly
50 55 60

Thr Tyr Glu Ile Ser Trp Gly Asp Gly Gly Asn Leu Val Gly Gly Lys
65 70 75 80

Gly Trp Asn Pro Gly Leu Asn Ala Arg Ala Ile His Phe Glu Gly Val
85 90 95

Tyr Gln Pro Asn Gly Asn Ser Tyr Leu Ala Val Tyr Gly Trp Thr Arg
100 105 110

Asn Pro Leu Val Glu Tyr Tyr Ile Val Glu Asn Phe Gly Thr Tyr Asp
115 120 125

Pro Ser Ser Gly Ala Thr Asp Leu Gly Thr Val Glu Cys Asp Gly Ser
130 135 140

Ile Tyr Arg Leu Gly Lys Thr Thr Arg Val Asn Ala Pro Ser Ile Asp
145 150 155 160

Gly Thr Gln Thr Phe Asp Gln Tyr Trp Ser Val Arg Gln Asp Lys Arg
165 170 175

Thr Ser Gly Thr Val Gln Thr Gly Cys His Phe Asp Ala Trp Ala Arg
180 185 190

Ala Gly Leu Asn Val Asn Gly Asp His Tyr Tyr Gln Ile Val Ala Thr
195 200 205

Glu Gly Tyr Phe Ser Ser Gly Tyr Ala Arg Ile Thr Val Ala Asp Val
210 215 220

Gly
225

<210> 16
<211> 237
<212> PRT
<213> Aspergillus aculeatus

<400> 16

Met Lys Ala Phe Tyr Phe Leu Ala Ser Leu Ala Gly Ala Ala Val Ala
1 5 10 15

Gln Gln Thr Gln Leu Cys Asp Gln Tyr Ala Thr Tyr Thr Gly Ser Val
20 25 30

Tyr Thr Ile Asn Asn Asn Leu Trp Gly Lys Asp Ala Gly Ser Gly Ser
35 40 45

Gln Cys Thr Thr Val Asn Ser Ala Ser Ser Ala Gly Thr Ser Trp Ser
50 55 60

Thr Lys Trp Asn Trp Ser Gly Gly Glu Asn Ser Val Lys Ser Tyr Ala
65 70 75 80

Asn Ser Gly Leu Ser Phe Asn Lys Lys Leu Val Ser Gln Ile Ser Arg
85 90 95

Ile Pro Thr Ala Ala Gln Trp Ser Tyr Asp Asn Thr Gly Ile Arg Ala
100 105 110

Asp Val Ala Tyr Asp Leu Phe Thr Ala Ala Asp Ile Asn His Val Thr
115 120 125

Trp Ser Gly Asp Tyr Glu Leu Met Ile Trp Leu Ala Arg Tyr Gly Gly
130 135 140

Val Gln Pro Leu Gly Ser Lys Ile Ala Thr Ala Thr Val Glu Gly Gln
145 150 155 160

Thr Trp Glu Leu Trp Tyr Gly Val Asn Gly Ala Gln Lys Thr Tyr Ser
165 170 175

Phe Val Ala Pro Thr Pro Ile Thr Ser Phe Gln Gly Asp Val Asn Asp
180 185 190

Phe Phe Lys Tyr Leu Thr Gln Asn His Gly Phe Pro Ala Ser Ser Gln
195 200 205

Tyr Leu Ile Thr Leu Gln Phe Gly Thr Glu Pro Phe Thr Gly Gly Pro
210 215 220

Ala Thr Leu Thr Val Ser Asp Trp Ser Ala Ser Val Gln
225 230 235

<210> 17
<211> 347
<212> PRT
<213> T. reesei

<220>
<221> PEPTIDE
<222> (1)..(347)

<400> 17

Met Lys Ala Asn Val Ile Leu Cys Leu Leu Ala Pro Leu Val Ala Ala
1 5 10 15

Leu Pro Thr Glu Thr Ile His Leu Asp Pro Glu Leu Ala Ala Leu Arg
20 25 30

Ala Asn Leu Thr Glu Arg Thr Ala Asp Leu Trp Asp Arg Gln Ala Ser
35 40 45

Gln Ser Ile Asp Gln Leu Ile Lys Arg Lys Gly Lys Leu Tyr Phe Gly
50 55 60

Thr Ala Thr Asp Arg Gly Leu Leu Gln Arg Glu Lys Asn Ala Ala Ile
65 70 75 80

Ile Gln Ala Asp Leu Gly Gln Val Thr Pro Glu Asn Ser Met Lys Trp
85 90 95

Gln Ser Leu Glu Asn Asn Gln Gly Gln Leu Asn Trp Gly Asp Ala Asp
100 105 110

Tyr Leu Val Asn Phe Ala Gln Gln Asn Gly Lys Ser Ile Arg Gly His
115 120 125

Thr Leu Ile Trp His Ser Gln Leu Pro Ala Trp Val Asn Asn Ile Asn
130 135 140

Asn Ala Asp Thr Leu Arg Gln Val Ile Arg Thr His Val Ser Thr Val
145 150 155 160

Val Gly Arg Tyr Lys Gly Lys Ile Arg Ala Trp Asp Val Val Asn Glu
165 170 175

Ile Phe Asn Glu Asp Gly Thr Leu Arg Ser Ser Val Phe Ser Arg Leu
180 185 190

Leu Gly Glu Glu Phe Val Ser Ile Ala Phe Arg Ala Ala Arg Asp Ala
195 200 205

Asp Pro Ser Ala Arg Leu Tyr Ile Asn Asp Tyr Asn Leu Asp Arg Ala
210 215 220

Asn Tyr Gly Lys Val Asn Gly Leu Lys Thr Tyr Val Ser Lys Trp Ile
225 230 235 240

Ser Gln Gly Val Pro Ile Asp Gly Ile Gly Ser Gln Ser His Leu Ser
245 250 255

Gly Gly Gly Gly Ser Gly Thr Leu Gly Ala Leu Gln Gln Leu Ala Thr
260 265 270

Val Pro Val Thr Glu Leu Ala Ile Thr Glu Leu Asp Ile Gln Gly Ala
275 280 285

Pro Thr Thr Asp Tyr Thr Gln Val Val Gln Ala Cys Leu Ser Val Ser
290 295 300

Lys Cys Val Gly Ile Thr Val Trp Gly Ile Ser Asp Lys Asp Ser Trp
305 310 315 320

Arg Ala Ser Thr Asn Pro Leu Leu Phe Asp Ala Asn Phe Asn Pro Lys
325 330 335

Pro Ala Tyr Asn Ser Ile Val Gly Ile Leu Gln
340 345

<210> 18
<211> 419
<212> PRT
<213> T.reesei

<220>
<221> PEPTIDE
<222> (1)..(419)

<400> 18

Met Asn Lys Pro Met Ser Ser Leu Leu Leu Ala Ala Thr Leu Leu Ala
1 5 10 15

Gly Gly Ser Ile Ala Gln Gln Thr Val Trp Gly Gln Cys Gly Gly Gln
20 25 30

Gly Trp Ser Gly Pro Thr Ser Cys Val Ala Gly Ser Ala Cys Ser Thr
35 40 45

Leu Asn Pro Tyr Tyr Ala Gln Cys Ile Pro Gly Ala Thr Thr Met Ser
50 55 60

Thr Thr Thr Lys Pro Thr Ser Val Ser Ala Ser Thr Thr Arg Ala Ser
65 70 75 80

Ala Thr Ser Ser Ala Thr Pro Pro Pro Ser Ser Gly Leu Thr Arg Phe
85 90 95

Ala Gly Val Asn Ile Ala Gly Phe Asp Phe Gly Cys Gly Thr Asp Gly
100 105 110

Thr Cys Val Thr Ser Lys Val Tyr Pro Pro Leu Lys Asn Tyr Ala Gly
115 120 125

Thr Asn Asn Tyr Pro Asp Gly Val Gly Gln Met Gln His Phe Val Asn
130 135 140

Asp Asp Lys Leu Thr Ile Phe Arg Leu Pro Val Gly Trp Gln Tyr Leu
145 150 155 160

Val Asn Asn Asn Leu Gly Gly Thr Leu Asp Ser Asn Asn Phe Gly Lys
165 170 175

Tyr Asp Gln Leu Val Gln Ala Cys Leu Ser Leu Gly Val Tyr Cys Ile
180 185 190

Val Asp Ile His Asn Tyr Ala Arg Trp Asn Gly Gly Ile Ile Gly Gln
195 200 205

Gly Gly Pro Thr Asn Asp Gln Phe Thr Ser Leu Trp Ser Gln Leu Ala
210 215 220

Gln Lys Tyr Ala Ser Gln Ser Lys Val Trp Phe Gly Ile Met Asn Glu
225 230 235 240

Pro His Asp Val Asn Ile Asn Thr Trp Ala Thr Thr Val Gln Ala Val
245 250 255

Val Thr Ala Ile Arg Asn Ala Gly Ala Thr Ser Gln Phe Ile Ser Leu
260 265 270

Pro Gly Asn Asp Trp Gln Ser Ala Gly Ala Phe Ile Ser Asp Gly Ser
275 280 285

Ala Ala Ala Leu Ser Gln Val Lys Asn Pro Asp Gly Ser Thr Pro Asn
290 295 300

Leu Ile Phe Asp Leu His Lys Tyr Leu Asp Ser Asp Asn Ser Gly Thr
305 310 315 320

His Ala Asp Cys Val Thr Asn Asn Val Asn Asp Ala Phe Ser Pro Val
325 330 335

Ala Thr Trp Leu Arg Gln Asn Asn Arg Gln Ala Ile Leu Thr Glu Thr
340 345 350

Gly Gly Gly Asn Thr Gln Ser Cys Ile Gln Tyr Leu Cys Gln Gln Phe
355 360 365

Gln Tyr Ile Asn Gln Asn Ser Asp Val Tyr Leu Gly Tyr Val Gly Trp
370 375 380

Gly Ala Gly Ser Phe Asp Ser Thr Tyr Ile Leu Thr Glu Thr Pro Thr
385 390 395 400

Gly Ser Gly Ser Ser Trp Thr Asp Thr Ser Leu Val Ser Ser Cys Ile
405 410 415

Ser Arg Lys

<210> 19
<211> 459
<212> PRT
<213> T.viride

<220>
<221> PEPTIDE
<222> (1)..(459)

<400> 19

Met Ala Pro Ser Val Thr Leu Pro Leu Thr Thr Ala Ile Leu Ala Ile
1 5 10 15

Ala Arg Leu Val Ala Ala Gln Gln Pro Gly Thr Ser Thr Pro Glu Val
20 25 30

His Pro Lys Leu Thr Thr Tyr Lys Cys Thr Lys Ser Gly Gly Cys Val
35 40 45

Ala Gln Asp Thr Ser Val Val Leu Asp Trp Asn Tyr Arg Trp Met His
50 55 60

Asp Ala Asn Tyr Asn Ser Cys Thr Val Asn Gly Gly Val Asn Thr Thr
65 70 75 80

Leu Cys Pro Asp Glu Ala Thr Cys Gly Lys Asn Cys Phe Ile Glu Gly
85 90 95

Val Asp Tyr Ala Ala Ser Gly Val Thr Thr Ser Gly Ser Ser Leu Thr
100 105 110

Met Asn Gln Tyr Met Pro Ser Ser Ser Gly Gly Tyr Ser Ser Val Ser
115 120 125

Pro Arg Leu Tyr Leu Leu Asp Ser Asp Gly Glu Tyr Val Met Leu Lys
130 135 140

Leu Asn Gly Gln Glu Leu Ser Phe Asp Val Asp Leu Ser Ala Leu Pro
145 150 155 160

Cys Gly Glu Asn Gly Ser Leu Tyr Leu Ser Gln Met Asp Glu Asn Gly
165 170 175

Gly Ala Asn Gln Tyr Asn Thr Ala Gly Ala Asn Tyr Gly Ser Gly Tyr
180 185 190

Cys Asp Ala Gln Cys Pro Val Gln Thr Trp Arg Asn Gly Thr Leu Asn
195 200 205

Thr Ser His Gln Gly Phe Cys Cys Asn Glu Met Asp Ile Leu Glu Gly
210 215 220

Asn Ser Arg Ala Asn Ala Leu Thr Pro His Ser Cys Thr Ala Thr Ala
225 230 235 240

Cys Asp Ser Ala Gly Cys Gly Phe Asn Pro Tyr Gly Ser Gly Tyr Lys
245 250 255

Ser Tyr Tyr Gly Pro Gly Asp Thr Val Asp Thr Ser Lys Thr Phe Thr
260 265 270

Ile Ile Thr Gln Phe Asn Thr Asp Asn Gly Ser Pro Ser Gly Asn Leu
275 280 285

Val Gly Ile Thr Arg Lys Tyr Gln Gln Asn Gly Val Asp Ile Pro Ser
290 295 300

Ala Gln Pro Gly Gly Asp Thr Ile Ser Ser Cys Pro Ser Ala Ser Ala
305 310 315 320

Tyr Gly Gly Leu Ala Thr Met Gly Lys Ala Leu Ser Ser Gly Met Val
325 330 335

Leu Val Phe Ser Ile Trp Asn Asp Asn Ser Gln Tyr Met Asn Trp Leu
340 345 350

Asp Ser Gly Asn Ala Gly Pro Cys Ser Ser Thr Glu Gly Asn Pro Ser
355 360 365

Asn Ile Leu Ala Asn Asn Pro Asn Thr His Val Val Phe Ser Asn Ile
370 375 380

Arg Trp Gly Asp Ile Gly Ser Thr Thr Asn Ser Thr Ala Pro Pro Pro
385 390 395 400

Pro Pro Ala Ser Ser Thr Thr Phe Ser Thr Thr Arg Arg Ser Ser Thr
405 410 415

Thr Ser Ser Ser Pro Ser Cys Thr Gln Thr His Trp Gly Gln Cys Gly
420 425 430

Gly Ile Gly Tyr Ser Gly Cys Lys Thr Cys Thr Ser Gly Thr Thr Cys
435 440 445

Gln Tyr Ser Asn Asp Tyr Tyr Ser Gln Cys Leu
450 455

<210> 20
<211> 232
<212> PRT
<213> T.reesei

<220>
<221> PEPTIDE
<222> (1)..(232)

<400> 20

Met Lys Phe Leu Gln Val Leu Pro Ala Leu Ile Pro Ala Ala Leu Ala
1 5 10 15

Gln Thr Ser Cys Asp Gln Trp Ala Thr Phe Thr Gly Asn Gly Tyr Thr
20 25 30

Val Ser Asn Asn Leu Trp Gly Ala Ser Ala Gly Ser Gly Phe Gly Cys
35 40 45

Val Thr Ala Val Ser Leu Ser Gly Gly Ala His Ala Asp Trp Gln Trp
50 55 60

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Ser Gly Gly Gln Asn Asn Val Lys Ser Tyr Gln Asn Ser Gln Ile Ala
65                  70                  75                  80

Ile Pro Gln Lys Arg Thr Val Asn Ser Ile Ser Ser Met Pro Thr Thr
                85                  90                  95

Ala Ser Trp Ser Tyr Ser Gly Ser Asn Ile Arg Ala Asn Val Ala Tyr
            100                 105                 110

Asp Leu Phe Thr Ala Ala Asn Pro Asn His Val Thr Tyr Ser Gly Asp
        115                 120                 125

Tyr Glu Leu Met Ile Trp Leu Gly Lys Tyr Gly Asp Ile Gly Pro Ile
    130                 135                 140

Gly Ser Ser Gln Gly Thr Val Asn Val Gly Gly Gln Ser Trp Thr Leu
145                 150                 155                 160

Tyr Tyr Gly Tyr Asn Gly Ala Met Gln Val Tyr Ser Phe Val Ala Gln
                165                 170                 175

Thr Asn Thr Thr Asn Tyr Ser Gly Asp Val Lys Asn Phe Phe Asn Tyr
            180                 185                 190

Leu Arg Asp Asn Lys Gly Tyr Asn Ala Ala Gly Gln Tyr Val Leu Ser
        195                 200                 205

Tyr Gln Phe Gly Thr Glu Pro Phe Thr Gly Ser Gly Thr Leu Asn Val
    210                 215                 220

Ala Ser Trp Thr Ala Ser Ile Asn
225                 230
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